Thomson, G. H. *Some Recent Work in Factorial Analysis and a Retrospect.* Presidential address delivered to the British Psychological Society at Durham, 1946.

### Elections to the Society

THE following have been elected Fellows (starred) and Members of the *Society* during the past quarter :

Miss Eileen M. Brooke
*D. A. J. Buxton, Esq., M.A.
Mrs. Anne Fawcett
Derek Goldfoot, Esq., M.A., B.M.
*J. Denis Hill, Esq., M.B., B.S., M.R.C.S., M.R.C.P., D.P.M.
Mrs. Joan Houseman, M.B., B.S.
Turner McLardy, Esq., M.B.E., B.Sc., M.B., Ch.B., D.P.M.
Mrs. P. A. Middleton
Leonard Wilensky, Esq.

# REVIEWS OF BOOKS

## GENETICS

**Cold Spring Harbor Symposia on Quantitative Biology, Vol. XI.** *Heredity and Variation in Microorganisms.* Cold Spring Harbor, L.I., New York, 1946. The Biological Laboratory. Edited by M. Demerec. Pp. xi+314. Price $6.00.

BY and large, the progress in most branches of science is fairly continuous. But at irregular intervals, a single discovery or change of technique may suddenly open up completely new vistas and powerfully influence the development of adjacent fields. Some twenty years ago, we witnessed the revolution in genetics brought about by Muller's discovery that mutations can be produced by X-rays which initiated the field of radiation genetics. Some twelve years ago, the rediscovery and proper interpretation of the Dipteran salivary gland chromosomes resulted in a powerful development in the field of cytogenetics. And just now there is happening yet another of these sudden and unpredictable outbursts, this time in the field of developmental genetics.

Why all this sudden excitement about the use of microorganisms for genetical research? On the face of it there are several obvious disadvantages; for instance, the whole of classical genetics is based on the analysis of meiosis (whether by genetical or by cytological methods); yet many microorganisms, such as bacteria, have no known sexual reproduction (though a contribution in the volume under review may well shake that dogma). The answer to our question is largely that microorganisms show none of that integration of diverse parts which is the hallmark of all higher organisms, and which interposes itself as an almost impenetrable thicket between the primary gene action and its ultimate effects. Hence in this new field, we reach the primary gene effects without having to pierce layer upon layer of epigenetic effects, and can study them and their relation to the cytoplasm by direct methods. Indeed for many years past no more exciting vista has been opened up in the field of genetics than that covered by a galaxy of able investigators in this volume.

The contributions deal with viruses and bacteriophages, with bacteria, fungi and ciliates, and one paper each deals with plastid mutations and with leukæmic cells in mice. No attempt can be made here to summarize the extraordinarily interesting contents of this volume. The literature on the subject is very scattered and not easily accessible. Hence in this symposium a representative cross-section of the whole field has for the first time been presented to a wider audience. The contributors (T. F. Anderson, D. Bonner, M. I. Bunting, M. Delbrück and W. T. Bailey, Jr., M. Demerec and R. Latarjet, L. Dienes, R. J. Dubos, A. D. Hershey, A. Hollander and C. W. Emmons, T. Johnson, J. G. Kidd, J. Lederberg and E. L. Tatum, C. C. Lindegren and G. Lindegren, S. E. Luria, A. Lwoff, E. C. MacDowell, M.

McCarty, H. E. Taylor and O. T. Avery, N. W. Pirie, G. Pontecorvo, M. M. Rhoades, O. W. Richards, F. J. Ryan, A. Shapiro, T. M. Sonneborn, S. Spiegelman, E. L. Tatum, and C. B. van Niel) include most of the investigators who have made major contributions in this field. This is the kind of book so exciting that departmental libraries will have long waiting lists of prospective borrowers; and many of the latter will buy it themselves rather than wait for the departmental copy.

P. F. MILLER.

**Altenburg, Edgar.** *Genetics.* London, 1947. Constable & Co. Ltd. Pp. xii + 452. Price 16s.

PROFESSOR ALTENBURG is one of the "old guard" who witnessed the birth of modern genetics in the "Drosophila room" of Columbia University in the years preceding the first world war. No wonder then that the genetics of Drosophila is given considerable prominence in this new text-book of genetics. But whereas the chromosomal genetics of Drosophila is admirably treated in great detail and right up to its more sophisticated ramifications, other fields of equal importance are disappointingly low-brow and scarcely go beyond the standard expected of the first-year student. This applies particularly to the treatment of human genetics and of developmental genetics. Though the book opens with the remark that "emphasis has been placed on modern genetics" and that "the author has attempted to make the student feel that genetics is a growing science, that important developments are now taking place," some of the most important developments which are now taking place are not mentioned at all; for instance the fundamental work on the biochemical mutants of Neurospora and other microorganisms is conspicuous by its absence, nor is any reference made to the *Rh* factor in man and the incompatibility relationships between mother and fœtus, to mention only two glaring omissions. To do the author justice, what is given is generally correct, which is more than can be said about some text-books of genetics. But the reviewer cannot help doubting whether the book will inspire the young student, or give him the balanced outlook on the subject in the way a first-class text-book should.

One specific point of detail must be mentioned. The author has in some cases arbitrarily altered the symbols of well-known genes in organisms with which he cannot have more than a nodding acquaintance. To introduce these most unfortunate and confusing new symbols after international committees of specialists have gone to great trouble to eradicate old confusions cannot be justified by the reasons given by the author. If he thinks that genetical symbolism is in need of reform, the place to ventilate his ideas would have been the Nomenclature Committee of the next International Congress of Genetics.

H. G. HILL.

## GENETICS AND MEDICINE

**Grüneberg, H.** *Animal Genetics and Medicine.* London, 1947. Hamish Hamilton Medical Books. Pp. 296. Price 21s.

THIS book is an attempt to establish new bridges between pathology and rodent genetics, which so far have been contiguous only in cancer research. In the first chapter Dr. Grüneberg clears the ground by a brief consideration of such topics as chromosomes and genes, homozygotes and heterozygotes, dominance, causal and formal genesis, and then proceeds to discuss three aspects of the subject, which are more specific for his theme, namely, the spectra (syndromes) of inherited diseases, the time of their onset and, finally, their analysis as dynamic processes. The second chapter describes the advantages, for ætiological studies, of using inherited diseases of animals and also the limitations of this comparative method. An important advantage is the homogeneity of the material, i.e. the investigator can be sure that he is dealing with the "same condition" all the time, which he can keep and reproduce by breeding, whereas the clinician